

CLAIMS

What is claimed is:

1 1. A method for forming an image on a phosphor screen of a cathode ray tube,
2 comprising:

3 providing an electron gun assembly having an electron source disposed at a
4 source end and electrodes for forming an image of the electron source on the phosphor screen;

5 providing a multi-element field effect cathode to serve as the electron source, the
6 multi-element field effect cathode comprising a common carrier assembly and a plurality of field
7 emission arrays and electrical bond pads for controlling emission current from each array;

8 providing a deflection apparatus to cause an electron beam from each array to
9 traverse the phosphor screen in a horizontal and a vertical direction.

10 providing a clock signal having a selected number of succession of increments;

11 providing a phosphor screen wherein the phosphor screen is comprised of a
12 plurality of stripes of phosphor and a plurality of stripes of mask material disposed between the
13 plurality of stripes of phosphor; and

14 applying selected voltages to the deflection apparatus and to the electrical bond
15 pads in response to the clock signal to cause a selected emission current from a selected array as
16 the electron beam from the array traverses the phosphor screen.

1 2. The method of claim 1 wherein an increment of the clock signal causes the
2 electron beam to move a distance of one-half the width of the beam.

1 3. The method of claim 1 wherein four increments of the clock signal cause the
2 electron beam to move across a phosphor stripe having a selected color.

1 4. The method of claim 1 wherein the field emission array is a carbon-based
2 material.